

What is claimed is:

1. An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can, wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

10 wherein the thickness of a trunk portion of the external can is made thinner than 0.18 mm, and the thickness of the sealing edge portion of the external can is made 1.4 times greater than the thickness of the trunk portion.

2. An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can, wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

15 wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein along all the outer circumferential portion of the metal plate, as a portion for sandwiching the resin sealing member together with the external can,

20 a curved portion, which has an average curvature radius of not more than 1 mm

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in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof, is installed.

3. An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and
5 said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein along all the outer circumferential portion of the metal plate, as a portion for sandwiching the resin sealing member together with the external can,

15 a curved portion, which has an average curvature radius of not more than 1 mm in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof and which is formed in a curved manner over an angle range greater than 90 degrees, is installed.

4. The alkaline dry cell according to claim 2 or claim 3, wherein the curved portion is maintained in contact with the resin sealing member within an angle range greater than 90 degrees in a cross-section obtained when the metal plate is cut in the thickness direction through the center thereof.

5. An alkaline dry cell comprising:

a cathode and an anode, a separator placed between said cathode and
25 said anode and an electrolyte solution that are housed inside an external can

TOTAL PAGES: 10

having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

- wherein the opening edge of the external can is sealed by tightening the
5 resin sealing member with the external can and the supporting member,

wherein a sheet of metal plate that also serves as an anode terminal plate
is used as the supporting member,

wherein the metal plate comprises a terminal face having a protruding
shape placed in the center and a circumferential flange face formed in a manner
surrounding the terminal face when viewed in a direction vertically penetrating
the terminal face, and a flat portion is formed on the inner circumferential side of
the flange face, the flange face flat portion and the terminal face being set so as
not to be in parallel with each other.

- 10 6. The alkaline dry cell according to claim 5, wherein the angle made by the
terminal face of the metal plate and the flat portion of the flange face is set to not
15 less than 4 degrees.

7. The alkaline dry cell according to claim 6, wherein along all the outer
circumferential portion of the metal plate, as a portion for sandwiching the resin
sealing member together with the external can, a curved portion, which has an
20 average curvature radius of not more than 1 mm in a cross-section obtained
when the metal plate is cut in the thickness direction through the center thereof,
is installed.

- 25 8. An alkaline dry cell comprising:
a cathode and an anode, a separator placed between said cathode and
said anode and an electrolyte solution that are housed inside an external can

TOP SECRET - 19760

having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner circumferential portion that are attached to an opening edge of the external can,

- wherein the opening edge of the external can is sealed by tightening the
5 resin sealing member with the external can and the supporting member,

wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member,

wherein the resin sealing member comprises a boss section holding an anode collector rod to be inserted to the center portion of the anode, an outer circumferential portion which is supported by the supporting member with the inner circumferential side so as to contact the inner circumferential face of the external can, and a connecting portion for connecting the boss section and the outer circumferential portion,

- wherein an anti-explosion thin portion is installed on the foot portion on the
15 boss section side in the connecting portion of the resin sealing member, and a stress absorbing portion, which absorbs one portion of the stress exerting on the connecting section so as not to allow the stress to concentrate on the anti-explosion thin portion when the resin sealing member is tightened to seal the opening edge of the external can, is placed on the foot portion on the outer
20 circumferential portion side,

wherein said stress absorbing portion is formed in such a manner that its thickness becomes thinner discontinuously as compared with a portion positioned right inner circumferential side thereof, with a step difference placed between it and the portion positioned right inner circumferential side thereof.

- 25 9. An alkaline dry cell comprising:

- a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a supporting member for supporting said sealing member with the inner 5 circumferential portion that are attached to an opening edge of the external can,
- wherein the opening edge of the external can is sealed by tightening the resin sealing member with the external can and the supporting member,
- wherein a sheet of metal plate that also serves as an anode terminal plate is used as the supporting member, the resin sealing member comprises a boss 10 section holding an anode collector rod to be inserted to the center portion of the anode, an outer circumferential portion which is supported by the supporting member with the inner circumferential side so as to contact the inner circumferential face of the external can, and a connecting portion for connecting the boss section and the outer circumferential portion, and
- 15 wherein an anti-explosion thin portion is installed on the foot portion on the boss section side in the connecting portion of the resin sealing member, said thin portion being formed in such a manner that its thickness becomes thinner discontinuously as compared with a portion positioned right outer circumferential side thereof in a manner so as to surround the thin portion, with a step difference 20 being placed between it and the portion positioned outside thereof.
10. An alkaline dry cell comprising:
- a cathode and an anode, a separator placed between said cathode and said anode and an electrolyte solution that are housed inside an external can having a cylindrical shape with a bottom, and a resin sealing member and a 25 supporting member for supporting said sealing member with the inner

circumferential portion that are attached to an opening edge of the external can,
wherein the opening edge of the external can is sealed by tightening the
resin sealing member with the external can and the supporting member,

- wherein a sheet of metal plate that also serves as an anode terminal plate
5 is used as the supporting member,

wherein the resin sealing member comprises a boss section holding an
anode collector rod to be inserted to the center portion of the anode, an outer
circumferential portion which is supported by the supporting member with the
inner circumferential side so as to contact the inner circumferential face of the
external can, and a connecting portion for connecting the boss section and the
outer circumferential portion,

- 10 wherein an anti-explosion thin portion is installed on the foot portion on the
boss section side in the connecting portion of the resin sealing member in a
manner so as to have a thickness that becomes discontinuously thinner as
15 compared with a first thickness portion located right outside this in a manner so
as to surround the thin portion with a step difference from the first thickness
portion, and a stress absorbing portion, which absorbs one portion of the stress
exerting on the connecting section so as not to allow the stress to concentrate on
the anti-explosion thin portion when the resin sealing member is tightened to
20 seal the opening edge of the external can, is placed on the foot portion on the
outer circumferential portion side in the connecting portion,

wherein said stress absorbing portion is formed in such a manner that its
thickness becomes thinner discontinuously as compared with a second
thickness portion positioned right inner circumferential side thereof, with a step
25 difference being placed between it and the second thickness portion,

TOP SECRET - 100

wherein said connecting portion has a portion reaching to the second thickness portion from the first thickness portion, which becomes continuously thicker from the first thickness portion toward the second thickness portion.

11. The alkaline dry cell according to claim 10, wherein the thickness of the first thickness portion is set to ranging from 0.4 mm to 0.5 mm, and the second thickness portion is set to ranging from 2.5 times to 3.0 times greater than the first thickness portion.

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